

Bug-Wise



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Carpenter Bees: Carpenter bees may look a lot like bumble bees, but they're not. There are big differences in the biology and habits of these two groups of bees. In fact, they don't even belong to the same entomological family. One of the most easily observed physical differences is that the top of the abdomen of carpenter bees is slick and shiny, while bumble bees (illustrated above) are covered with black and white or yellow hairs. Also, carpenter bees nest in above ground wood galleries, while bumble bees nest in the ground.

In the past ten years the situation has gotten a bit more confusing because of the arrival of the giant resin bee. This non-native bee looks a lot like a carpenter bee but has a longer, more cylindrical body and a larger, more conspicuous head. Giant resin bees do not bore into wood, but they nest in holes, and they find old carpenter bee galleries to be just the right size. These bees are now occur throughout the state, but are relatively uncommon. Like carpenter bees, they are not aggressive and stings are rare.

Although there are other species of carpenter bees in the state, the eastern carpenter bee, *Xylocopa virginica*, is by far the most common. The white-faced males are hard to miss because of their habit of buzzing about, hovering in mid-air, and occasionally hovering in one's face. Some people feel threatened by this behavior, but the males are harmless because they have no sting. Many of us may remember playing with 'white-faced bumble bees' as children.

Female carpenter bees can sting, but they are not aggressive, and do not sting unless forced to do so. Females are easily distinguished from males because their face is solid black, while the males have the distinct white spot in the middle of the face. Females also behave differently than males. They don't have time for the idle buzzing and aerial acrobatics of the males. They spend their time boring nesting galleries, collecting pollen and nectar to provision the gallery, and laying eggs.

Carpenter bees overwinter as adults inside their wood galleries and emerge in early spring. After the females of this generation finish boring galleries and laying eggs there will be a mid-summer lull in activity while the immature bees develop. Through much of Mississippi, a second generation will emerge in late summer to repeat the process, but there is only one generation per year in more northern areas of the country.

Galleries, which are a little less than 1/2 inch in diameter and can be more than a foot long, are usually made in unpainted softwood lumber. They especially prefer pine, cypress, and cedar, but will occasionally bore in other types of lumber. Carpenter bees do not eat wood; they only use it for nesting. Carpenter bees congregate around favorable nesting locations, and females will reuse, and enlarge old galleries from year to year. Timbers can be weakened by the presence of multiple galleries, and galleries can also allow moisture to enter the wood and hasten decay. These are minor wood-boring pests, but, their cumulative damage can become significant in some situations. However, carpenter bees are also important pollinators and should only be controlled when necessary to prevent structural damage. Some butterfly and pollinator gardeners actually include split rail fencing in their garden to encourage carpenter bees—so they can enjoy their aerial antics.

Painted or sealed wood is seldom attacked by carpenter bees, so painting or sealing the wood surface is the best long-term solution for carpenter bees. Of course there are situations where the rustic look of unpainted wood is preferred and situations where it may not be practical to paint the exposed beams and rafters in barns, storage sheds, etc. When using paint to prevent carpenter bee attack, it is important for the paint or sealant coat to be thick enough to totally cover the wood grain. Simply staining the wood does not usually work. The bees will readily bore through paint as long as they can still 'feel' the wood grain. Vinyl or aluminum siding also will thwart carpenter bees.

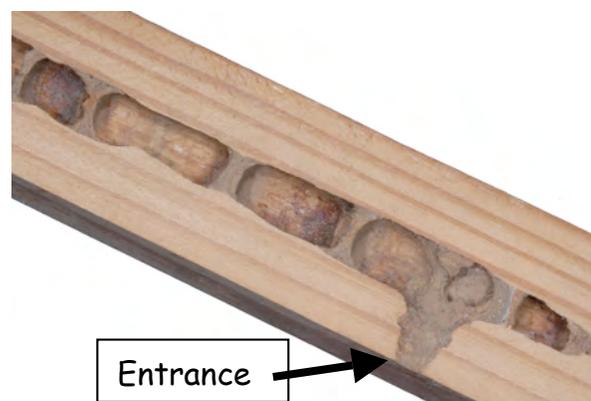
The most effective way to control carpenter bees with insecticides is to apply small amounts of insecticide dust directly into the galleries. The dust remains active in the galleries for many months and kills the bees as they come in contact with it. This method literally gets them coming and going. Female bees are killed when they return to the gallery and newly hatched bees are killed when they emerge. Dusts work better and last longer than liquid or aerosol treatments because they remain in the gallery where they will contact the bees, rather than soaking into the wood. Products formulated as gels or pastes and sold in syringe-like applicators to be injected into the entrance hole may also work. Unfortunately, this method of treating individual galleries does not usually give 100% control because it is difficult to find and treat all galleries, and it is an on-going project because as long as there is attractive exposed wood, new bees will continue to appear. Still, this is one of the best ways for homeowners to reduce carpenter bee populations around buildings plagued by this pest.

Two of the most commonly available dust products are Terro Ant Dust and Enforcer Fire Ant Killer; both contain 0.05% deltamethrin and are labeled for control of bees and wasps. There are other brands of deltamethrin dust, and dusts containing other active ingredients but read the label to verify the product is approved for the intended use. Professional pest control companies use a product, called Delta Dust, which also contains 0.05% deltamethrin. Drione dust, which contains pyrethrins + piperonyl butoxide + silica gel, is another effective dust option. Dusts can be quickly and easily applied into galleries by the use of a bulb duster. Bulb dusters are difficult to find locally, but they are readily available from on-line suppliers—just do a search for “bulb duster.” If you are going to be doing much treating, it is well worth going to the trouble to get a good bulb duster.

One hazard associated with this method of control is that it may require using a ladder. If you use a ladder take precautions to avoid falls and electrical hazards. Commercially available “dust sticks” are basically a bulb duster on an extension pole that can be used to treat overhead carpenter bee galleries while standing on the ground—if you can “drive” them well enough to hit the entrance hole. Be vigilant of electrical hazards if you use one of these!

The picture below shows a longitudinal section cut through a carpenter bee gallery. Note that the gallery is divided into brood cells and a single bee develops in each cell. A gallery may contain ten or twelve brood cells. Bees developing in the cells farthest from the entrance hole have to wait until their younger siblings are ready to emerge before they can exit the brood chamber. The board shown here was cut before the bees had emerged, which explains why the divisions between the brood cells, made of a mixture of sawdust and saliva, are still intact.

This photo makes it easy to see why the dust treatments work. Puff a bit of dust into the entrance of a gallery that is still under construction and the female bee will have to travel through it. Likewise, young bees will be exposed to the dust when they exit. When a female bee has completely filled a gallery with brood chambers she will plug the entrance. In such cases it will be necessary to use a screwdriver or similar tool to remove the entrance plug in order to be able to inject the insecticide dust.



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This information is for educational and preliminary planning purposes only. Brand names mentioned in this publication are used as examples only. No endorsement of these products is intended. Other appropriately labeled products containing similar active ingredients should provide similar levels of control. Always read and follow the insecticide label.